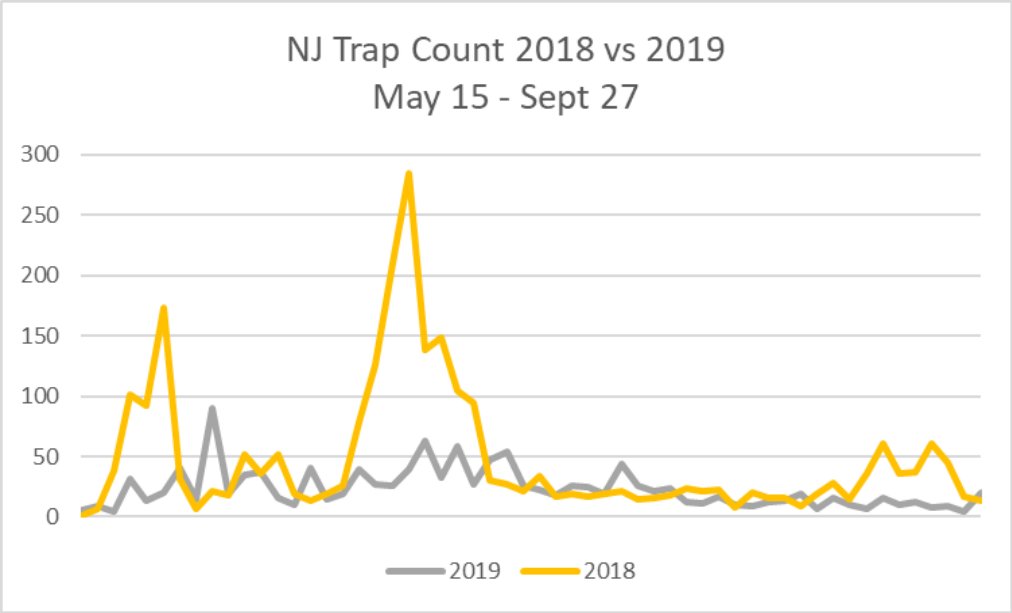
City of Geneva
September 2019 - Status Report

SEASON PERSPECTIVE

Introduction. Weather conditions critically affect the seasonal mosquito population. Excessive rainfall periods trigger hatches of floodwater mosquitoes (*Aedes vexans*), the dominant annoyance species in northern Illinois that has a flight range of 15 to 20 miles. The other target species is the northern house mosquito (*Culex pipiens*), the primary vector of West Nile virus (WNV) that flourishes under stagnant water and drought conditions.

Since the start of the 2019 mosquito season, frequent rainfalls have hatched a total of 30 floodwater mosquito broods at O'Hare. The 2019 season began with record-setting May rainfall of 8.25 inches surpassed the 2018 May previous record total. A very wet September of over 6 inches in some areas, produced several late season broods. However, the impact of the predicted broods this season has not materialized. The lower populations could possibly have been diminished by flushing of eggs and larvae from habitats, and impact of the sustained subzero temperatures down to minus 23° during the February "Polar Vortex." As a result, adult mosquito trap counts have been lower than anticipated, and most citizen feedback on the Clarke hotline portal have been for standing water, rather than widespread reports of significant mosquito annoyance.

Clarke operates a northern Illinois network of 100 New Jersey light traps to measure the seasonal adult mosquito population. The following graph compares the 2018 trap counts, the highest in 30 years, to 2019's much lower levels for the period of May 15th to September 27th:



While floodwater mosquitoes are significantly less this year, the *Culex* population is slightly above 2018 levels. There was a late season surge of West Nile activity including 7 cases in Northeastern Illinois. The DuPage County Health Department raised their WNV Personal Protection Index from 2 to 3. Therefore, for the homestretch of the season, Clarke operations were focused on *Culex*, as well as, and floodwater mosquito larval habitats. Accordingly, late season truck ULV adulticide applications were recommended to suppress the adult mosquito population and protect public health.

MOSQUITO-BORNE DISEASE UPDATE

West Nile Virus (WNV)

2018 – USA. **In 2018, there were 2,544 human cases of WNV across the United States reported by the Centers for Disease Control & Prevention (CDC).** The following are the top ten states that recorded the most WNV cases in 2018 in descending order: NE-CA-ND-IL-SD-TX-PA-IA-MI and CO. These 10 states accounted for 61% of the 2018 human case count. In 2018, the State of Illinois recorded 174 human WNV cases, including 16 fatalities, compared to a 2017 case count of 90, including 8 fatalities.

2019 - USA. As of September 24, 2019, a total of 46 states and the District of Columbia have reported West Nile virus infections in people, birds, or mosquitoes in 2019. Overall, 543 cases of West Nile virus disease in people have been reported to CDC. Of these, 355 (65%) were classified as neuroinvasive disease (such as meningitis or encephalitis) and 188 (35%) were classified as non-neuroinvasive disease. Arizona has been hardest hit with 153 human cases including 16 fatalities. As the season progresses, the CDC website will provide the current status of WNV activity across the United States. https://www.cdc.gov/westnile/index.html

2019 – ILLINOIS. As of September 28th, the Illinois Department of Public Health reported 8 human WNV cases in Cook Co. (4), DuPage County (2), Kankakee Co. (1) and downstate Sangamon Co. (1). Statewide surveillance has documented 1,100 WNV+ adult mosquito samples with 79.2% collected in Cook County

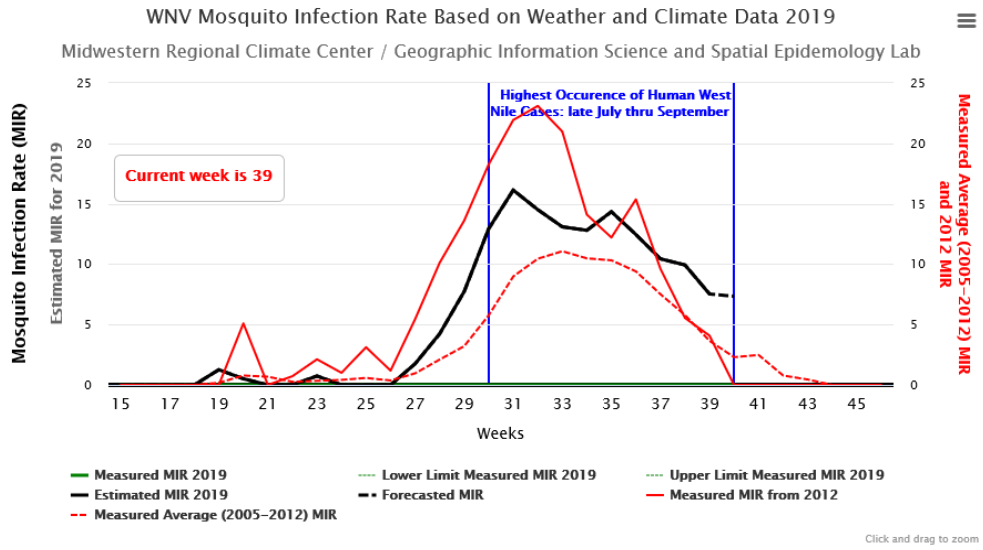
Zika virus (ZIKV)

Zika virus (ZIKV) is a mosquito-borne disease that is transmitted primarily by the *Aedes aegypti* mosquito and sexual transmission. *Aedes aegypti* is a tropical mosquito that does not occur in northern Illinois. While ZIKV symptoms are generally mild in adults (fever, rash, joint pain and conjunctivitis), pregnant women who contract ZIKV can pass the virus to their unborn children, increasing the risks of serious birth defects like microcephaly. In 2016, the continental United States endured a major ZIKV outbreak with more than 5,100 travel-related nationwide and 139 locally transmitted cases in areas of south Florida. In 2017, the ZIKV human case count was dramatically diminished in the continental United States with the CDC reporting 407 cases. In 2018, the ZIKV human case count was 64 travelers.

In 2019, the human case count further declined to the following year-to-date breakdown:

- 7 – travelers returning from affected areas
- 0 – cases acquired through presumed local mosquito-borne transmission
- 0 – cases acquired through sexual transmission
- In the U.S. Territories (American Samoa, Guam, Puerto Rico &USVI), there are 32 cases acquired through presumed local mosquito-borne transmission, and two from travelers returning from an affected area.

Midwest Regional Climatic Center (MRCC) WNV Prediction Model – Week 35 – 8/26/19



New Jersey Light Trap Counts

(*Red numbers indicate an annoyance level – a catch of greater than or equal to 30 females)

Trap Location	Sep 02	Sep 04	Sep 06	Sep 09	Sep 11	Sep 13	Sep 16	Sep 18	Sep 20
37W681 Kaneville Rd	9	11	7	4	10	7	11	6	3
Eastside Dr Fire Station	0	0	1	0	0	0	0	0	1
Westhaven & Heartland well site	1	1	2	0	1	0	0	0	0
Wheeler Dr & Stevens St	4	21	13	2	21	6	17	3	4

*Mal - trap malfunction

Services Performed September 2019:

Service Item	Start Date
ROS2888 – Biomist 3+15 Truck ULV	09/11/2019